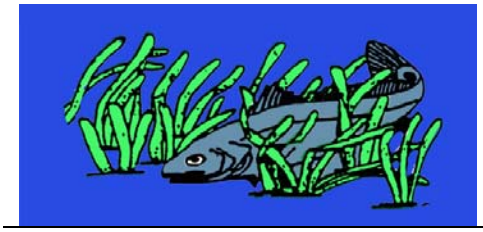

Program Management Committee

Florida Bay and Adjacent Marine Systems Science Program

www.aoml.noaa.gov/flbay/

TO: Florida Bay/Florida Keys Feasibility Study Project Managers

FROM: Physical Science Team

THRU: Program Management Committee, Florida Bay and Adjacent Marine Systems Science Program

SUBJ: Florida Bay/Florida Keys Feasibility Study Hydrodynamic Modeling Peer Review Panel Reports

DATE: October 1, 2002

The Physical Science Team (PST) met on September 10, 2002 and among other items of business spent some time reviewing and discussing the summary and individual reports prepared by a peer review panel convened by the FB/FK Feasibility Study (FBFKFS). Based on our many years of experience working on the oceanography of the South Florida coastal ecosystem, we concur with the major recommendations made but offer the following to supplement those materials and assist the FBFKFS in its important deliberations. In no particular order:

1) While it would appear to be prudent to consider the requirement of water quality modeling in selecting a hydrodynamic model, we hope that no specific water quality model/approach is decided prior to selection of a specific hydrodynamic model/approach. As one of our members explained, to do so would be "putting the cart before the horse";
2) Meaningful interim employment of the FATHOM (or any box model) requires a lot more specific direction than provided in any of these reviews. It is simply not clear what the expectations are for that effort so whether they are reasonable or meaningful is impossible to ascertain;
3) The "pilot modeling studies" funded by ENP in ca. 1995 and the final evaluation reports the investigators provided should have been furnished to the panel and the FBFKFS should consider these in their deliberations and neglect no possible source of help or relevant information in its eventual selection process. We strongly

endorse getting the best possible help on this difficult problem from wherever it can be obtained whether government, industry or academia;

4) We agree that the funding and the proposed (extended) time schedule should suffice but only if these are primarily used to support the physical modeling required. The set of related ecological modeling issues discussed are too ambitious even at the proposed funding level and three year duration;
5) The success of a Florida Bay model effort will depend upon corresponding complementary regional circulation modeling and upland hydrological modeling as well as a continued strong (perhaps supplemented) physical observation effort. All that is not presently available. The description of what will become available from presently planned NOAA and USGS activities (e.g.-TIME modeling) is simply too rosy and the other agencies will have to make specific relevant support commitments. Whomever is doing the regional modeling has to closely link it to the needs of the interior Bay modeling simulations;
6) A truly coupled Atmospheric Model may not be needed although some scenario evaluations may require improved wind, precipitation and evaporation forcing. To simulate sea-breeze (a major factor during some seasons in South Florida) and get to shorter than synoptic time scales output from something like the MM5 model available at UM may be necessary. For other purposes the NCEP ETA winds combined with monitoring data are likely to suffice. The issue will in part be time and space scale dependent;
7) Although presently ongoing basin scale studies inside Florida Bay represent an enormous addition to the present data, dye tracer studies in the Bay interior would help in elucidating complex inner Bay dynamics. None are presently funded or planned;
8) The PST strongly endorses the reviewer comment that the interior Bay modeling (and regional modeling for that matter) should make use of a "community" model and involve in the "community" process those personally knowledgeable about South Florida regional oceanography and Florida Bay
9) For some reason the reviewers were apparently not made aware of the standard data set project sponsored by the PST (scheduled for completion in February 2003) and funded by NOAA base funds.. That project was developed in an interagency process (see the PMC website), was endorsed by the PMC and served as the background to the Terms of Reference endorsed in the FBFKFS PMP document. The group(s) eventually selected for the Florida Bay modeling needs to use that data set for initial calibration/verification purposes. This will make alternative results more directly comparable (a problem in previous model evaluations) and give assurance to the research and stakeholder communities as to model adequacy.
10) Adequate bank topography in the Bay interior and along the western boundary in particular will be critical and need to be provided to whomever undertakes the Florida Bay hydrodynamic modeling.